

عنوان مقاله:

{Global attractor for a nonlocal hyperbolic problem on $\{\mathcal{R}\}^N$

محل انتشار:

مجله آنالیز غیر خطی و کاربردها، دوره 8، شماره 2 (سال: 1396)

تعداد صفحات اصل مقاله: 10

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خلاصه مقاله:

We consider the quasilinear Kirchhoff's problem $u_{tt} - \phi(x) \|\nabla u(t)\|^2 \Delta u + f(u) = 0$, $x \in \{\mathcal{R}\}^N$, $t \geq 0$, with the initial conditions $u(x, 0) = u_0(x)$ and $u_t(x, 0) = u_1(x)$, in the case where $N \geq 3$, $f(u) = |u|^a u$ and $(\phi(x))^{-1} \in L^{\infty}(\{\mathcal{R}\}^N) \cap L^1(\{\mathcal{R}\}^N)$ is a positive function. The purpose of our work is to study the long time behaviour of the solution of this equation. Here, we prove the existence of a global attractor for this equation in the strong topology of the space $X = \{ \mathcal{C}^1(\bar{D}) \times L^2(\{\mathcal{R}\}^N) \times L^2(\{\mathcal{R}\}^N) \}$. We succeed to extend some of our earlier results concerning the asymptotic behaviour of the solution of the problem

کلمات کلیدی:

quasilinear hyperbolic equations, Kirchhoff strings, global attractor, generalised Sobolev spaces, weighted L^p Spaces

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